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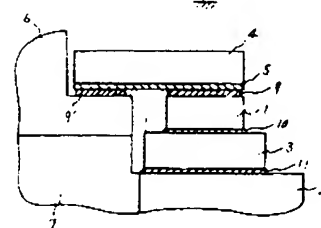
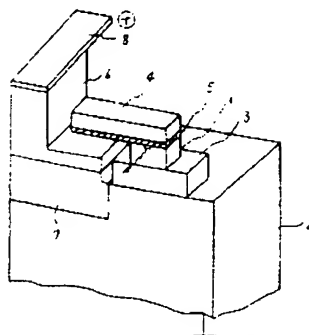
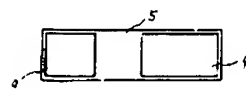
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APPLICATION NUMBER : 59067639

APPLICANT : HITACHI LTD;

INVENTOR : TOKUDA MASAHIRO;

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TITLE : SEMICONDUCTOR LASER DEVICE



ABSTRACT : PURPOSE: To obtain a highly reliable semiconductor laser device of which heat resistance is decreased, by a method wherein at least one of Si, BeO and SiC is included as a composed element of a lead line which is taken out from another electrode of a laser chip.

CONSTITUTION: An N electrode of the laser chip 1 is soldered to a copper made heat sink block 2 which is applied gold deposit interposing, for instance, an electrically conductive Si submount, and at a P electrode of a chip metal layer 5 which is metallizing formed on the surface of a beam 4 is electrically connected to an outer lead terminal 8 by soldering. On this assembly, a laser chip 1 is fused to an Si submount 3 by AuSn type solder 10 and subsequently the submount is fused to a block 2 by AuSn type solder 11 of which melting point is low than that of solder 10. Consequently, an electric lead is taken out from a P electrode using the metal layer 5 which is formed continuously depositing, for instance, Ti, Pt, Au and BLH 4 having PbSn type solder layer 9, 9' which is partly metalizing formed. Hereby, heat resistance of elements are remarkably decreased, and improvements of element quality and reliability will be possible.

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